

KATS, Grigoriy Borisovich; MAKSIMOV, I.S., red.; BOBYLEVA, L.V.,  
GERASIMOVA, Ye.S., tekhn. red.

[Preparation in the making of new products] Podgotovka proizvodstva novoi produktsii. Moskva, Ekonomizdat, 1962. 89 p.  
(MIRA 16:2)

(Factory management)

LOMANOV, F.M.; MILLER, E.E., kand. tekhn. nauk, retsenzent; KATS,  
G.B., kand. tekhn. nauk, red.; DEMKIN, N.F., tekhn. red.

[Production and organization structure of machinery plants]  
Proizvodstvennaia i organizatsionnaia struktura mashino-  
stroitel'nykh predpriatii. Moskva, Mashgiz, 1962. 97 p.  
(MIRA 16:3)

(Machinery industry--Management)

PODKATILOV, Vsevolod Ivanovich; KATS, G.I., red.; GONCHAROVA, Ye.A.,  
tekhn. red.

[Volokonovka District steps up its tempos] Volokonovka beret raz-  
beg. Belgorod, Belgorodskoe knizhnoe izd-vo, 1960. 46 p.

(MIRA 14:9)

(Volokonovka District--Stock and stockbreeding) (Socialist competiton)  
(Volokonovka District--Communist Party of the Soviet Union--Party work)

MOSIN, M.I.; KATS, G.I.; KUZNETSOV, N.A.

[Kursk Magnetic Anomaly. History of its discovery, study, and the industrial adoption of its iron ore deposits; collection of documents and materials in two volumes, 1742-1962] Kurskaia magnitnaia anomaliia. Istoriiia otkrytiia, issledovaniia i promyshlennogo osvoeniia zhelezorudnykh mestorozhdenii; sbornik dokumentov i materialov v dvukh tomakh 1742-1962. Belgorod, Belgorodskoe knizhnoe izd-vo. Vol.2. 1926 - 1962. 1962. 629 p. (MIRA 17:8)

KATS, G.I.; KREYN, S.G.

Limit center of a dynamic system. Zbir.prats' Inst.mat.AN URSR  
no.11:121-124 '48. (MIRA 9:9)  
(Dynamics) (Aggregates)

1. KATS, G. I.
2. USSR (600)
4. Matrixes
7. Reduction to the diagonal form of certain quadratic forms from non commutative quantities. Shor trud Inst mat AN USSR No. 12 1949

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721120015-2

APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721120015-2"

KATS, G.I.

Isomorphic mapping of topological groups onto direct products of groups  
satisfying the first counting principle. Usp. mat. nauk 8 no.6:107-113  
N-D '53. (MLRA 6:12)

(Groups, Theory of)



KATS, G.I.

USSR/ Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry.  
Catalysis

B-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11216

Author : III.. A.D. Stepukhovich and G.I. Kats

IV. A.D. Stepukhovich and G.P. Vorob'yeva

V. A.D. Stepokhovich and L.V. Derevenskikh

VI. Stepukhovich A.D., Stal'makhova L.S., Yerevin V.V.

VII. Stepukhovich A.D., Derevenskikh L.V.

Title : Kinetics and Mechanism of Decomposition of Hydrocarbons.

III. Kinetics and Mechanism of Thermal Decomposition of Divinyl at Low Temperatures.

IV. Kinetics and Mechanism of Decomposition of Isobutane in the Presence of Isobutylene and Propylene as Inhibitors

V. Kinetics of Thermal Decomposition of Gaseous Paraffins in the Presence of Added Divinyl

VI. Kinetics of Thermal Decomposition of Gaseous Paraffins in the Presence of Acetylene

VII. Kinetics and Mechanism of Decomposition of Gaseous Alkanes in the Presence of Allene

Orig Pub : Zhurnal fiz. khimii, 1954, 28, No 7, 1174-1185; No 8, 1361-1370; No 10, 1720-1724; No 11, 1878-1881; 1955, 29, No 12, 2129-2132

1/4

USSR/ Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry.  
Catalysis

B-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11216

Abstract : III. The velocity constant of divinyl decomposition, calculated in accordance with the equation of the reactions of second order, varies linearly, at 570-620° and 2-30 mm Hg pressure, depending on  $1/p_0$  ( $p_0$  -- initial pressure). Calculated were mean duration of life of divinyl molecule in activated state,  $5 \cdot 10^{-8}$  seconds, the number of kinetically active degrees of freedom 20, and dissociation energy of divinyl  $E = 79.4 \pm 1.9$  kcal/mole. Decomposition of divinyl conforms to the Dintsess-Frost equation and is interpreted as a chain reaction undergoing spontaneous inhibition by decomposition products. Additions of divinyl accelerate decomposition of  $C_2H_6$  at 620°. Accelerative action of divinyl reaches a limit at 12%.

IV. By the method of inhibiting additives (RZhKhim, 1953, 8215) a study was made of thermal decomposition of isobutane at pressure of 10 mm Hg and temperatures of 548 and 573°. Addition of 0.5% slows down the decomposition sharply, on increase of the addition from 1 to 7% effectiveness of its action decreases, and with 7-10% saturation is reached (first order velocity constant acquires constant value). Under the same conditions inhibition by isobutylene is more effective than by propylene.

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USSR/ Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry.  
Catalysis

"APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000721120015-2"

B-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11216

Experimental data on inhibiting action of additives fit the equation:  $1/W - W_0 = A + BC$  (1), wherein  $W$  -- reaction velocity,  $W_0$  -- residual velocity,  $A$  and  $B$  -- constants,  $C(\text{add})$  -- concentration of additive, which proves the chain nature of the decomposition. The primary effect is decomposition of isobutane molecule at C-C bond. Inhibiting action of olefins is explained by removal of H atom by active radical from molecule of additive with formation of inactive unsaturated radicals. By means of equation (1) were calculated velocity constants of the reaction of chain termination at the wall and at molecules of additive. Activation energy of inhibiting reactions brought about by isobutylene and propylene is, respectively, 5.6 and 8.5 kcal/mole, that of the reaction of termination at wall, 14.7 kcal/mole.

V. Study of kinetics of thermal decomposition of propane, butane and isobutane, in the presence of divinyl, with initial pressure of decomposing hydrocarbons ~ 10 mm Hg, and at temperatures of 510-593°. Additions of divinyl, which is a product of cracking of hydrocarbons, do not inhibit decomposition of these hydrocarbons. Absence of inhibiting

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unav increase of latter occurs essentially with formation of  $CH_3$  radical. Communication II, see RZhKhim, 1957, 393.

4/4

KATS, G.I.

Topological spaces into which complete uniformities may be introduced.  
Dokl. AN SSSR 99 no.6:897-900 D '54. (MLRA 8:2)

1. Predstavleno akademikom P.S.Aleksandrovym.  
(Topology)

*KATS, G.I.*

KATS, G.I.

Entirely regular spaces without complete uniform structures. Usp.  
mat.nauk 12 no.3:329-332 My-Je '57. (MIRA 10:10)  
(Topology)

AUTHOR: Kats, G.I.

20-119-1-4/52

TITLE: On the Decomposition of Selfadjoint Operators in Terms of Eigenfunctions (O razlozhenii po sobstvennym funktsiyam samosopryazhennykh operatorov)

PERIODICAL: Doklady Akademii Nauk, 1958, Vol 119, Nr 1, pp 19-22 (USSR)

ABSTRACT: The author proposes the construction of generalized elements which generalizes the construction of generalized functions due to S.L.Sobolev. Just so as Berezanskiy [Ref 3] the author defines the fundamental functions as the domain of definition  $D_T$  of a certain linear operator  $T$ , where  $T$  has not necessarily to be a differential operator. In  $D_T$  a new norm is introduced. In order that this norm is connected in a suitable manner with the initial norm of the given Hilbert space, for  $T$  it is demanded: A)  $T$  is closed,  $D_T$  is dense, B) there exists a bounded operator  $T^{-1}$  defined in the whole space, where  $T^{-1}(T\varphi) = \varphi$  for all  $\varphi \in D_T$ . For an otherwise arbitrary  $T$ , then the fundamental functions and the generalized ones form complete normed spaces. It is shown: In order that among the generalized elements generated by  $T$  there exists a complete system of

Card 1/2

AUTHOR: Kats, G.I. 20-120-5-6/67  
TITLE: On Functional Closure of Completely Regular Spaces (O funktsional'noy zamknutosti vpolne regulyarnykh prostranstv)  
PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 120, Nr 5, pp 953-955 (USSR)  
ABSTRACT: Results of Kubenskiy [Ref 4] on the connection between functionally closed and complete topological spaces are generalized to the case of completely regular spaces. Two corresponding theorems (formulated according to a remark of Yu.M.Smirnov) are proved. The following theorem is the most essential one:  
Theorem 2: If discrete spaces of the cardinality  $\leq m$  are functionally closed, then arbitrary complete topological spaces of the cardinality  $m$  are functionally closed.  
There are 5 references, 3 of which are Soviet, 1 American and 1 Polish.  
PRESENTED: February 11, 1958, by P.S.Aleksandrov, Academician  
SUBMITTED: February 7, 1958  
1. Topology

Card 1/1

16(1)

AUTHOR: Kats, G.I.

SOV/20-125-1-5/67

TITLE: Generalized Functions on Locally Compact Groups and the Decomposition of the Regular Representation (Obobshchennyye funktsii na lokal'no kompaktnykh gruppakh i razlozheniye regul'yarnogo predstavleniya)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 1, pp 27-30 (USSR)

ABSTRACT: Let  $H$  be a separable Hilbert space and  $G$  be a locally compact group satisfying the second axiom of countability. The systems of generalized elements of  $H$  are introduced as in [Ref 4]. It is shown that the decomposition of the regular representation of  $G$  into irreducible representations can be interpreted as the decomposition of a suitably constructed space of generalized functions into the sum of representations in certain subspaces  $H^{(\lambda)}$ . Here the spaces  $H^{(\lambda)}$  always contain dense subsets of elements with a character of a function. The results are formulated in four long theorems without any proof. The author mentions papers of I.M. Gel'fand, M.A. Naymark, and A.G. Kostyuchenko. There are 6 references, 5 of which are Soviet, and 1 American.

PRESENTED: November 20, 1958, by N.N. Bogolyubov, Academician

SUBMITTED: November 18, 1958

Card 1/1

KATS, G.I. (Kiyev)

Generalized elements of Hilbert space [with summary in English].  
Ukr.mat.zhur. 12 no.1:13-24 '60. (MIRA 13:10)  
(Hilbert space)



MOSIN, M.I.; KATS, G.I.; SHEVYAKOV, L.D., akademik, red.; SHUKHARDIN, S.V., red.; AGOSHKOV, M.I., red.; BORISOV, S.F., red.; BYSTROV, N.M., red.; KISLOV, V.M., red.; KRAKHALEV, M.K., red.; KUZNETSOV, N.A., red.; MAN'KOVSKIY, G.I., red.; MEL'NIKOV, N.V., red.; POLKOVNIKOV, A.A., red.; POPOV, K.S., red.; CHAYKIN, S.I., laureat Leninskoy premii, red.; GONCHAROVA, Ye.A., tekhn. red.

[Kursk Magnetic Anomaly; history of the discovery study, and commercial development of iron-ore deposits. Collection of documents and materials in two volumes, 1742-1960] Kurskaia magnitnaia anomalii; istoriia otkrytiia, issledovaniia i promyshlennogo osvoeniia zhelezorudnykh mestorozhdenii. Sbornik dokumentov i materialov v dvukh tomakh, 1742-1960. Belgorod, Belgorodskoe knizhnoe izd-vo. Vol.1. 1742-1926. 1961. 417 p. (MIRA 15:3)

(Kursk Magnetic Anomaly---Iron ores)  
(Magnetic prospecting)

KATS, G.I.

Generalizing the group principle of duality. Dokl.AN SSSR 138 no.2:  
275-278 My '61. (MIRA 14:5)

1. Predstavleno akademikom A.N.Kolmogorovym.  
(Groups, Theory of)

KATS, G.I. (Kiyev)

Generalized functions on a locally compact group and expansions  
of unitary representations. Trudy Mosk. mat. ob-va 10:3-40  
'61. (MIRA 14:9)

(Groups, Theory of)

KATS, G.I.

Spectral expansion of self-adjoint operators on generalized elements  
of a Hilbert space. Ukr.mat.zhur. 13 no.4:13-33 '61. (MIRA 15:7)  
(Calculus, Operational) (Spaces, Generalized)

KAT, G.I. [Kats, G.I.]

Generalized functions on a locally compact group, and decomposition  
of unitary representations. Analele mat 16 no.4:11-52 O-D '62.

KATS, G.I.

Representations of compact ring groups. Dokl. AN SSSR 145  
no. 5:989-992 '62. (MIRA 15:8)

1. Predstavleno akademikom N.N. Bogolyubovym.  
(Groups, Theory of)

GERSHANOVICH, V.N.; ZUYEV, V.A.; BUNINA, N.N.; KUZNETSOVA, N.V.; KATS, G.I.

Chemical nature and the mechanism of action of the succinic oxidase inhibitor from Trypanosoma cruzi. Biokhimiia 27 no.2:252-259  
Mr-Apr '62. (MIRA 15:8)

1. Institute of Vaccines and Sera, and the State Control Institute of Medical and Biological Preparations, Moscow.  
(SUCCINIC OXIDASE) (TRYPANOSOMA CRUZI)

KATS, G.I.

Finite ring groups. Dokl. AN SSSR 147 no.1:21-24 N '62.  
(MIRA 15:11)

1. Predstavleno akademikom N.N. Bogolyubovym.  
(Groups, Theory of)



KATS, G.I.

Compact and discrete ring groups. Ukr. mat. zhur. 14 no.3:  
260-270 '62. (MIRA 15:9)  
(Groups, Theory of)

KATS, G.I. (Kiyev)

Ring groups and the duality principle. Trudy Mosk. mat. ob-va  
12:259-301 '63. (MIRA 16:11)

KATS, G.I. (Kiyev); PALYUTKIN, V.G. (Kiyev)

Example of a ring group generated by Lie groups. Ukr. mat.  
zhur. 16 no.1:99-104 '64. (MIRA 17:5)

L 00558-66 EMT(m)/EMP(w)/EWA(d)/T/EMP(t)/EMP(k)/EMP(b)/EMP(z)/EWA(c)  
MJW/JD/HW

ACCESSION NR: AP5019945

UR/0133/65/000/008/0730/0734  
621.774.35

AUTHORS: Teterin, P. K.; Luzin, Yu. F.; Kats, G. I.; Kaufman, M. M.; Kukarskikh,  
V. N.

TITLE: Manufacture of stainless steel pipes with low nickel content

SOURCE: Stal', no. 8, 1965, 730-734

TOPIC TAGS: stainless steel pipe, stainless steel, steel alloy / EP53 steel,  
EP54 steel, OKh21N6M2T steel, OKh21N5T steel

ABSTRACT: The plastic properties and structure of new low-nickel alloys OKh21N5T (EP53) and OKh21N6M2T (EP54), recommended as substitutes for steels 1Kh18N9T and 1Kh18N12M2T, were investigated at TsNIIChM; the technology of pipe rolling from these steels was developed and introduced at Novotrubnyy zavod. By hot twisting it was found that plasticity of the steels increased steadily with working temperature (1000-1250C) and rose sharply above 1200C. Thirty specimens were pierced at different temperatures (3 of each steel at 1050, 1100, 1150, 1200, 1250C), and impact strength and microstructure were investigated. It was found that the impact strength at room temperature decreased as piercing temperature increased,

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L 00558-66

ACCESSION NR: AP5019945

dropping sharply above 1200C (from 20 and 14 kgm/cm<sup>2</sup> at 1200C to 14 and 7 kgm/cm<sup>2</sup> at 1250C for EP53 and EP54 respectively) and that the grain size increased above 1200C. Thus for satisfactory mechanical and surface properties the working temperature should be kept at  $\approx 1150C$ . Comparison of pressure on the rollers and power requirements between these steels and expensive alloys LKh18N9T and LKh18N12MT showed these to be 30-40% lower (on the average) for the new alloys. After hot-rolling into 41 x 4.5-mm pipes (at 7° feed, roller speed 2.0 m/sec, wall thickness reduction 32%, drawing coefficient 1.8-1.85, final temperature 950-1000C) the alloy properties were found to be  $\sigma_B = 70.1, 63.0 \text{ kg/mm}^2$ ;  $\sigma_5 = 29.3, 29.5\%$ ;  $a_k = 19.8, 16.1 \text{ kgm/cm}^2$  for EP53 and EP54 respectively after quenching from 1050C in water. Based on these results, technical parameters were defined for making pipes (ChMTU/UkrNITI No 313-61) and pipe blanks (ChMTU/TsNIICHM No 569-61). After rolling 108 x 5.5 mm and 89 x 4.5 mm pipes under industrial conditions it was found that the best heat treatment consisted of 8-10 minutes at 970C and quenching in water (for both steels). Orig. art. has: 4 figures and 6 tables.

ASSOCIATION: TsNIICHM (TsNIICHM); Novotrubnyy zavod (New Pipe Plant)

SUBMITTED: 00

ENCL: 00

SUB CODE: MM, IE

NO REF SOV: 000

OTHER: 000

Card 2/2

OSADCHIY, V.Ya.; GETIYA, I.G.; MOGILEVKIN, F.D.; AL'SHEVSKIY, L.Ye.;  
KLYAMKIN, N.L.; KATS, G.I.

Deformation and rate conditions of the pipe reduction process  
on a three-high mill. Izv. vys. ucheb. zav.; chern. met. 8  
no.11:83-87 '65. (MIRA 18:11)

1. Moskovskiy institut stali i splavov.

KATS, G.I. (Kiyev)

Ring groups and the duality principle, Part 2. Trudy Mosk. mat.  
ob-va 13:84-113 '65. (MIRA 18:9)

GERSHANOVICH, V.N.; PALKINA, N.A.; KATS, G.I.

Oxidative metabolism of *Staphylococcus aureus* and its mutant produced under the influence of ultraviolet rays. *Biokhimiia* 27 no.1:109-119 Ja-F '62. (MIRA 15:5)

1. State Control Institute of Medical Biological Preparations, Moscow.  
(*STAPHYLOCOCCUS AUREUS*) (ULTRAVIOLET RAYS--PHYSIOLOGICAL EFFECT)  
(METABOLISM)



KATS, G. L.

28613

Obiznyenyenii Krovyanogo Davlyeniya Pri Gipyertonii Pod Vliyaniyem Amital  
Natriya Vrachyeb. Dyelo, 1949, No. 9, STB. 795-98

SC: LETOPIS NO. 38

KATS, G.L.

Blood pressure fluctuation due to emotional factors and cold tests in healthy subjects. Klin.med., Moskva 28 no.12:74 Dec 50. (CML 20:5)

1. Of the Hospital Therapeutic Clinic (Director--Prof.K.I. Bunin), Stalino Medical Institute, Stalino.

KOPP, I.F., professor; KATS, G.I., kandidat meditsinskikh nauk

Possibility for a favorable outcome in hypertension with severe  
retinopathy. Sov.med. 20 no.6:25-29 '56. (MIRA 9:9)

1. Iz gospi'tal'noy terapevticheskoy kliniki (dir. prof. A.S.Voronov)  
i kliniki glaznykh bolezney Stalinskogo meditsinskogo instituta  
imeni Gor'kogo.

(HYPERTENSION, complications,  
retinopathy, ther. (Rus))

(RETINA, diseases,  
hypertensive, ther. (Rus))

BUNIN, E.I. [deceased] dotsent (Stalino); KATS, G.L., kandidat meditsinskikh nauk (Stalino)

Effectiveness of prolonged drug-induced sleep for treating hypertension. Klin.med. 34 no.5:91 My '56. (MLRA 9:10)

1. Iz gosital'noy terapevticheskoy kliniki Stalinskogo meditsinskogo instituta.

(HYPERTENSION) (SLEEP-THERAPEUTIC USE)

KATS, G.L., dots.

Digitoxin, a new cardiac glycoside, in the treatment of circulatory insufficiency. Vrach.delo supplement '57:44 (MIRA 11:3)

1. Kafedra gospital'noy terapii (zav.-prof. A.S.Voronov)  
Stalinskogo meditsinskogo instituta.

(CARDIAC GLYCOSIDES) (BLOOD--CIRCULATION, DISORDERS OF)

KATS, G.L., dotsent

Stomach bleeding as an indication of hemorrhage diathesis. Vrach.  
(MIRA 12:12)  
delo no.5:545 My '59.

1. Gosptal'naya terapevticheskaya klinika (zav. - prof. A.S. Voronov)  
Stalinskogo meditsinskogo instituta.  
(STOMACH --DISEASES) (HEMOPHILIA)

KATS, G.L.

Use of diuretics in cardiac insufficiency. Vrach. delo no.1:152-153  
Ja '62. (MIRA 15:2)

1. Gosptal'naya terapevticheskaya klinika (zav. - prof. A.S.Voronov)  
Donetskogo meditsinskogo instituta.  
(DIURETICS AND DIURESIS) (HEART--DISEASES)

KATS, G.L., dotsent

Prevention of a recurrent circulatory disorder in mitral heart defects. Vrach.delo no.12:19-23 D '62. (MIRA 15:12)

1. Kafedra gosspital'noy terapii (zav. - prof. A.S.Voronov)  
Donetskogo meditsinskogo instituta i Donetskaya oblastnaya  
klinicheskaya bol'nitsa.

(BLOOD—CIRCULATION, ~~DISORDERS~~ OF)

(MITRAL VALVE—DISEASES)

(CARDIAC GLYCOSIDES)



KATS, G.L., dotsent

Treatment of circulatory insufficiency in patients with mitral defects with cardiac glycosides in various combinations. Kardiologiya 3 no.5:75-76 S-O '63. (MIRA 17:9)

1. Iz kafedry gosspital'noy terapii (zav. - prof. A.S. Voronov) Donetskogo meditsinskogo instituta.

ACC NR: AP7003000

(A)

SOURCE CODE: UR/0413/66/000/024/0110/0110

INVENTORS: Samorosov, V. A.; Kats, G. M.; Abarbanel', Z. I.

ORG: none

TITLE: A hydraulic press for making products from powdered materials. Class 58, No. 189686

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24, 1966, 110

TOPIC TAGS: powder metal molding, ceramic pressing, piezoelectric ceramic

ABSTRACT: This Author Certificate presents a hydraulic press for making products from powdered materials, such as are used in piezo-ceramics. The press includes a container, a movable powder-feeding case, a floating mold, upper and lower pistons, and a casing (see Fig. 1). To provide for regulating the height of the products, the upper piston of the press has shoulders (the diameter of which is larger than the diameter of the upper plunger) and a floating mold. The shaft of the lower piston carries a spring-loaded washer placed in a hollow cup screwed into the body of the press. To prevent the powdered material from becoming stuck in the container and in the feeding case, the container may include a stirrer with a pendulum drive, while the feeding case may be provided with an electric vibrator. To control the height of the products, the body of the press may carry an indicator resting with its base against the bottom of the

Card 1/2

UDC: 621.226:621.762

ACC NR: AP7003000

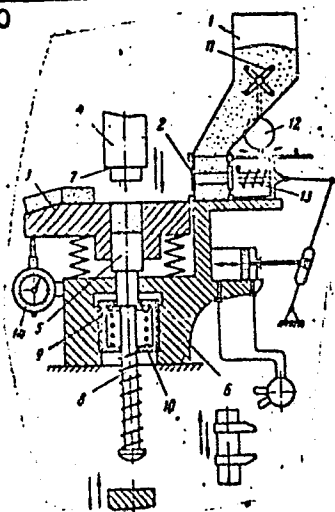


Fig. 1. 1 - container; 2 - powder-feeding case; 3 - mold; 4 - upper piston; 5 - lower piston; 6 - body; 7 - shoulders; 8 - shaft; 9 - washer; 10 - cup; 11 - stirrer; 12 - pendulum drive; 13 - electric vibrator; 14 - dial indicator

floating mold. Orig. art. has: 1 figure.

SUB CODE: 11, 13/ SUBM DATE: 26Dec64

Card 2/2

KATS, G.N.

USSR/Mathematics - Topology

Card 1/1      Pub. 22 - 4/63

Authors      : Kats. G.N.

Title        : Topological spaces into which a complete uniform structure can be introduced

Periodical   : Dok. AN SSSR 99/6, 897-900, Dec 21, 1954

Abstract     : A study is presented and the so-called P - spaces are defined. A series of theorems, describing the properties of P - spaces, are proved. Seven references; 2-USSR (1937-1953).

Institution:        .....

Presented by: Academician P.S. Alexandroff, October 7, 1953

1.6000

33651

S/058/61/000/012/003/083

A058/A101

AUTHORS: Butuzov, V.P., Mirinskiy, D.S., Kats, G.S.

TITLE: Draw-in intensifier for producing superhigh pressure

PERIODICAL: Referativnyy zhurnal. Fizika, no. 12, 1961, 20, abstract 12A311  
(Tr. Vses. n.-i. in-ta p'yezooptich. mineral'n. syr'ya, 1960, v. 3,  
no. 2, 113 - 117)

TEXT: The present article describes the design of a high-pressure intensifier in the form of a two-way hydraulic press with a high-pressure block. The high-pressure block is designed as a self-centering device reminiscent of a draw-in clamp. The substance to be compressed, which is cube-shaped, is placed between six punches. The upper and lower punches are displaced towards each other by displacing the upper and lower presses. The four lateral punches approach each other by virtue of the displacement of a special ring. The design enables one to heat the specimen and measure its temperature.

Ye. Ponyatovskiy

[Abstracter's note: Complete translation]

Card 1/1

ACCESSION NR: AR3000538

S/0081/63/000/007/0144/0015

SOURCE: RZh. Khimiya, Abs. 7p15

AUTHOR: Butuzov, V. P.; Mirinskiy, D. S.; Kats, G. S.

TITLE: New super-high pressure equipment

CITED SOURCE: Sb. Eksperim. issled. v obl. glubynnykh protsessov.  
M., AN SSSR, 1962, 172-184

TOPIC TAGS: super-high pressure; 1000-ton press; reduction of radial stress; cubical collet multiplier

TRANSLATION: Following a brief review of equipment for producing pressures up to 100 kat, the principle of "reduction of radial stress" is considered. According to this principle the cylindrical die is made up of sections which are pressure-fitted into an outer ring. In a steel die of this design a pressure up to 50,000 atmospheres [kat] can be produced. Also a cubical collet multiplier with six plungers which re-

Cord 1/2

ACCESSION NR: AR3000538

strict the space within which a pressure up to 100,000 atmospheres [kat] is produced. This multiplier is actuated by a single press. The question is also considered concerning optimal design of a press exerting a force up to 1000 tons. -- A. Likhter

DATE ACQ: 21May63

ENCL: 00

SUB CODE: 00

Card 2/2

KATS, G.S.; RAYBMAN, S.I.; GOREVICH, A.D.

Unusual course of cancer of the splenic flexure of the colon.  
Vop. onk. 11 no.8:103-104 '65. (MIRA 18:11)

1. Iz khirurgicheskoy kliniki II Moskovskogo meditsinskogo  
instituta i gorodskoy klinicheskoy bol'nitsy No.13 (nauchnyy  
rukovoditel' - prof. V.A.Ivanov; glavnyy vrach - M.B.Shansheyn).



GUREVICH, M.G.; KATS, G.V.; OVCHINNIKOV, I.M.; SAUKOV, A.A.

Materials on geochemical characteristics of natural gases associated  
with ore deposits of the Caucasus. Trudy IGEM no.46:83-91 '60.  
(MIRA 14:1)

(Ore deposits)

(Caucasus—Gas, Natural)

KATS, I., BERKOVICH, G.; TSINOVSKAYA, N.

Using potassium iodide in silver plating. Prom.koop. no.8:28-29  
Ag '57. (MIRA 10:9)

1. Sotrudnik TSentral'noy nauchno-issledovatel'skoy laboratorii  
Ukrpromsoвета (for Kats).
  2. Sotrudnik TSentral'noy nauchno-  
issledovatel'skoy laboratorii Ukrpromsoвета (for Berkovich).
  3. Sotrudnik TSentral'noy nauchno-issledovatel'skoy laboratorii  
Ukrpromsoвета (for TSinovskaya).
- (Silver-plating)

LUKIN, V.; YAROVAYA, N., studentka (Voronezh); KAZ'MIN, N. (Tambov); KATS, I.

Everyday affairs of volunteer firemen. Pozh.delo 9 no.216 F '63.  
(MIRA 16:3)

1. Nachal'nik uchebnogo punkta Leningradskogo oblastnogo i  
gorodskogo dobrovol'nogo pozhnogo obshchestva (for Kats).

KATS, I. A.

"Oxygen Consumption by Liver and Muscle Tissues in a Case of Experimental Diabetes."  
Thesis for degree of Cand. Medical Sci. Sub 7 Mar 50, Central Inst for the Advance  
Training of Physicians.

Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering  
in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

GLUSHKOV, Leonid Aleksandrovich; BATURIN, V.V., retsenzent; LITKENS, V.A., retsenzent; KATS, I.A., red.; KRYZHOVA, M.L., red. izd-va; KOROL', V.P., tekhn. red.

[Protection from overheating in the hot shops of metallurgical plants] Zashchita ot peregrefov v goriachikh tsekhakh metallurgicheskikh zavodov. Moskva, Metallurgizdat, 1963. 213 p.  
(MIRA 16:9)

(Metalworkers--Diseases and hygiene)

(Heat--Physiological effect)

(Metallurgical plants--Heating and ventilation)

KOZLOV, N.F.; KATS, I.D.

Remodeling of the Prenya Alcohol Plant. Spirt. prom. 25  
no. 4:33 '59. (MIRA 12:7)  
(Tula Province--Distilleries)

KATS, I.D.

Biological purification of chemically polluted discharges from  
the production of synthetic aliphatic acid (from designing  
practice). Trudy NPI 138:27-35 '63. (MIRA 16:10)

KATS, I.G.

The T-2 machine for separating leaves from stems of makhorka plants.  
Biul.tekh.-ekon.inform. no.5:45-46 '60. (MIRA 14:3)  
(Tobacco porcessing machinery)



GAYVORONSKIY, Aleksandr Grigor'yevich; GOROZHANKIN, V.I.; KATS, I.I.;  
SANDIGURSKIY, D.M.; MERILOV, A.Ya., inzhener, redaktor; PESTRYA-  
KOV, A.I., redaktor; VESKOVA, Ye.I., tekhnicheskiy redaktor

[Taking apart and assembling a DT-54 tractor] Razborka i sborka  
traktora DT-54. Pod red. A.IA.Merilova. Moskva, Gos. izd-vo selkhoz.  
lit-ry, 1956. 338 p. (MLRA 9:10)  
(Tractors--Repairing)

AVER'YANOV, S.N., inzh.; KATS, I.I., inzh.; IVANIDI, B.I., inzh.

DT-60 tractor. Trakt., 1 sel'khoz mash. 31 no.8:13-14 Ag '61.  
(MIRA 14:7)

1. Stalingradskiy traktornyy zavod.  
(Crawler tractors)

KATS, I.I.; PROSIKHIN, A.I.

Devices for regulating the engine temperature of the DT-75 tractor.  
Trakt. i sel'khoz mash. 31 [1.8.32] no 11:11-13 N '62. (MIRA 15:12)

1. Volgogradskiy traktornyy zavod.  
(Crawler tractors)

KATS, I.I.

Hygienic characteristics of oil aerosol in workshops with automatic turret lathes. Trudy LSGMI 75:192-196 '63.

(MIRA 17:4)

1. Kafedra gigiyeny truda s klinikoy professional'nykh zabolevaniy (zav. kafedroy - prof. Ye.TS.Andreyeva-Galanina) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta.

ROD'KIN, P.P.; SLONIMER, B.M.; KATS, L. Kh.

Brine-cooling coils made of glass. Khol.tekh. 38 no.2:51-52  
Mr-Ap '61. (MIRA 14:3)  
(Refrigeration and refrigerating machinery)

SOV/179-59-2-29/40

AUTHOR: Kats, I. L. (Moscow)

TITLE: The Calculation of the Critical Compressive Stress of a Rod Beyond the Proportional Limit (K raschetu kriticheskikh napryazheniy szhatykh sterzhney za predelom proporsional'nosti)

PERIODICAL: Izvestiya Akademii nauk SSSR OTN, Mekhanika i mashinostroyeniye, 1959, Nr 2, pp 171-173 (USSR)

ABSTRACT: The problem considered is that of the elastic stability beyond the proportional limit of a rod of unsymmetrical cross-section when the curvature differs in different parts of the rod, and the Engesser-Karman modulus therefore varies along the length of the rod. For a rod with both ends clamped and for one multiply supported, closed equations are obtained for the critical stress; for a rod with one end clamped and

Card 1/2

SOV/179-59-2-29/40

The Calculation of the Critical Compressive Stress of a Rod Beyond the Proportional Limit

the other supported, the critical stress depends on the solution of a transcendental equation. Numerical illustrations are given for each of the three cases. There are 5 references, of which 4 are Soviet and 1 English.

SUBMITTED: January 28, 1958.

Card 2/2

KATS, I.M.; ZUSMANOVICH, V.A. (Krivoy Rog)

Severe anaphylactic reaction caused by the prolonged use of penicillin and streptomycin. Vrach. delo no.8:132-133 Ag'63.  
(MIRA 16:9)

1. Terapevticheskoye otdeleniye meditsinskoy sanitarnoy chasti rudoupravleniya imeni XX partiynogo s"yezda, Krivoy Rog.

(ANAPHYLAXIS) (PENICILLIN--TOXICOLOGY)  
(STREPTOMYCIN--TOXICOLOGY)



KATS, I.M. (Krivoy Rog)

Work practices of the therapeutic service in reducing the incidence of diseases with a temporary loss of the capacity for work. Vrach. delo no.12109-110 D '63.

(MIRA 17:2)

1. Mediko-sanitarnaya chast' rudoupravleniya im. XX parts"yezda.

NOVAK, Samuil Yakovlevich; KATS, I.M., red.; PANCHENKO, M.F., red.isd-va;  
HAZAROVA, A.S., tekhn.red.

[Regulations for the servicing personnel of gas-operated boiler  
systems] Rukovodstvo dlia obelushivaiushchego personala gazi-  
fitsirovannykh kotel'nykh. Moskva, Isd-vo M-va kommun.khoz.  
RSFSR, 1960. 44 p. (MIRA 14:4)  
(Boilers)

KATS, I.M. (Krivoy Rog)

Diagnosis of ephemeral eosinophilic pneumonia. Vrach.delo no.11:1204  
H'58 (MIRA 12:1)

(PNEUMONIA)  
(EOSINOPHILES)

KULAKOV, I.N., inzh.; KATS, I.M., inzh.; SUKHAREVA, R.A., red.;  
KURILKO, T.P., tekhn. red.

[Collection of inventions; machine, tools and metal-  
cutting tools] Sbornik izobretenii; stanki i instrument.  
Moskva, TSentr. biuro tekhn. informatsii, 1961. 307 p.  
(MIRA 15:5)

1. Russia (1923- U.S.S.R.) Komitet po delam izobreteniy i  
otkrytiy.

(Machine tools—Technological innovations)

OSHKINA, N.I.; KATS, I.N.; PONOMAREVA, Ye.V.; SKLOVSKIY, I.V., red.;  
PETROVA, Ye.A., red.; KHEBNIKOVA, L.A., tekhn.red.

[Catalog of spare parts for petroleum equipment] Katalog:  
Zapasnye chasti k neftianny oborudovaniyu. Moskva, Gos.  
nauchno-tekhn.isd-vo nefi.i gorno-toplivnoi lit-ry. Pt.2.  
[Equipment for drilling wells] Oborudovanie dlia burenia  
skvazhin. Section 17. [Stationary drilling installations]  
Ustanovki burovye statsionarnye. No.1. [Uralmash 5D drilling  
rig with five diesel drive] Burovaia ustanovka Uralmash 5D  
piatidizel'nyi privod. 1957. 71 p. (MIRA 11:1)

1. Soyuzneftburmashremont, Gosudarstvennyy soyuznyy trest.  
(Oil well drilling--Equipment and supplies)

VAULIN, Yuriy Sergeyevich; KOLTUN, Sergey Ivanovich; LEVANOV, Aleksey  
Nikolayevich; KON'KOV, A.S., dotsent, retsenzents, KATS, I.S., inzh.,  
red.; DUGINA, N.A., tekhn.red.

[Design and planned use of dies] Raschet i planirovanie shtampov.  
Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 93 p.  
(MIRA 12:12)

(Dies (Metalworking))

KATS, I.S. (Odessa)

Spectrum of a singular string. Izv. vys. ucheb. zav.; mat.  
no.1:57-64 '62. (MIRA 15:1)  
(Mechanics, Analytic)

KATS, I.S.

Multiplicity of the spectrum of a second-order differential operator. Dokl.AN SSSR 145 no.3:510-513 J1 '62. (MIRA 15:7)

1. Predstavleno akademikom I.G.Petrovskim.  
(Operators (Mathematics))



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$$\sum_{i=1}^n |a_i| \Delta x_i \leq \epsilon, \quad -\infty < x < +\infty.$$

such that (a) the form

$$\sum_{i=1}^n |a_i| \Delta x_i \leq \epsilon$$

continuous with respect to  $\lambda$ . Let the function  $f(x)$

derivative  $df/dx$  be written as  $\delta_j(x)$ ,  $j=1, \dots, p$ .

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NUDEL'MAN, G.E.; YEGOROV, V.P.; KATS, I.G.; RYSIN, A.P.; MACHIKHIN,  
S.A.; VEL'TSHCHEV, V.N.

[Continuous line for the production of halvah] Potochnaia  
linia proizvodstva khalvy. Moskva, TSentr. in-t nauchno-  
tekhn. informatsii pishchevoi promyshl., 1964. 16 p.  
(MIRA 18:5)

KATS 1.5.  
Kac, I. S.

Mathematical Review.  
June 1954  
Analysis

10-4-54 LL

✓ Kac, I. S. On the structure of singular functions of bounded variation. Uspehi Matem. Nauk (N.S.) 8, no. 5(57), 157-159 (1953). (Russian)

Let  $V$  be the space of functions  $f$  of bounded variation on  $[0, 1]$  with  $f(0) = 0$ , let  $V_s$  be the set of singular functions in  $V$ , and let  $K$  be the subset of  $V_s$  consisting of those  $f$  for which the union of the intervals of constancy of  $f$  is of measure one. It is known [N. N. Lusin, Integral and trigonometric series, Gostehizdat, Moscow-Leningrad, 1951; these Rev. 14, 2] that every  $f$  in  $V$  can be represented as  $f = \sum f_i$ ,  $f_i$  in  $K$ , where the series is uniformly convergent on the interval  $[0, 1]$ .  $K \subseteq V_s$ , and it is well known that  $V_s$  is closed in  $V$  when distance between functions is the total variation of the difference. This note shows that  $K$  is dense in  $V_s$  in this metric. M. M. Day (Urbana, Ill.).

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Name: KATS, I. S.

Dissertation: Existence and behavior of spectral functions of differential systems of the second order

Degree: Cand Phys-Math Sci

*Defended at*  
*Publication*  
~~Affiliation~~: Min of Higher Education Ukrainian SSR, Khar'kov Order of Labor Red Banner State U imeni A. M. Gor'kiy

~~Defense~~ Date, Place: 1956, Khar'kov

Source: Knizhnaya Letopis', No 48, 1956

KATS, I.S.

SUBJECT USSR/MATHEMATICS/Theory of functions CARD 1/2 PG - 407  
 AUTHOR KAC I.S.  
 TITLE On the integral representations of the analytic functions which map the upper half plane into a part of it.  
 PERIODICAL Uspechi mat. Nauk 11, 3, 139-144 (1956)  
 reviewed 11/1956

Let the function  $f(z)$  belong to the class  $R$  if it is defined for  $\text{Im } z \neq 0$  and if it is holomorphic and satisfies the conditions

$$\text{a) } f(\bar{z}) = \overline{f(z)} \quad \text{b) } \frac{\text{Im } f(z)}{\text{Im } z} > 0.$$

The author proves two theorems:

1. In order that  $f(z) \in R$  admits the integral representation

$$f(z) = a + \int_{-\infty}^{+\infty} \left( -\frac{t}{1+t^2} + \frac{1}{t-z} \right) d\tau(t)$$

( $a$  - real,  $\tau(t)$  a non-decreasing function which for a certain  $\alpha$  ( $0 < \alpha < 2$ )

satisfies the condition  $\int_{-\infty}^{+\infty} \frac{d\tau(t)}{|t|^{\alpha+1}} < \infty$ ) it is necessary and sufficient that

Uspechi mat. Nauk 11, 3, 139-144 (1956)

CARD 2/2

PG - 407

$$\int_1^{\infty} \frac{\operatorname{Im} f(i\eta)}{\eta^{\alpha}} d\eta < \infty.$$

2. In order that  $f(z) \in R$  admits an absolutely convergent representation

$$f(z) = c + \int_{-\infty}^{+\infty} \frac{d\tau(t)}{t-z}, \quad \operatorname{Im} c = 0, \quad \tau(t) \text{ non-decreasing},$$

it is necessary and sufficient that the integral

$$\int_1^{\infty} \frac{\operatorname{Im} f(i\eta)}{\eta} d\eta$$

converges.



KATS, I. S.

USSR/Mathematics

Card 1/1 Pub. 22 - 3/43

Authors : Kats, I. S.

Title : On the existence of spectral functions in certain second order singular differential systems

Periodical : Dok. AN SSSR 106/1, 15-18, Jan 1, 1956

Abstract : The existence of spectral functions within some singular differential systems of the second order is proved. The proof is accomplished by a definition of the spectral function and the application of the topological concept of space and continuity, a series of theorems clarifies the properties of such functions. Eleven references: 1 German and 10 USSR (1955-1956).

Institution : .....

Presented by: Academician A. N. Kolmogorov, October 22, 1955

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function for each of these two systems. The author gives

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**CIA-RDP86-00513R000721120015-2"**

AUTHORS: Kats, I.S. and Kreyn, M.G. SOV/140-58-2-12/20

TITLE: A Criterion That the Spectrum of a Singular String is Discrete  
(Kriteriy diskretnosti spektra singulyarnoy struny)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy Ministerstva vysshego obrazovaniya SSSR, Matematika, 1958, Nr 2, pp 136-153 (USSR)

ABSTRACT: Let  $S$  be a string stretched between  $x = 0$  and  $x = L$  ( $L \leq \infty$ ) by a unit force. Let  $M(x)$  be the mass of the interval  $[0, x]$ , where  $M(0) = 0$ .  $S$  is called singular if  $L$  or  $M(L-0)$  is infinite. For singular strings it is assumed that  $M(L) = M(L-0) = \lim_{x \uparrow L} M(x)$ .

Such strings were treated already for several times by Kreyn [Ref 1,2,3]. In the present paper it is proved in detail that the following conditions are necessary and sufficient that the spectrum of the string is discrete:

1.  $\lim_{x \rightarrow \infty} x[M(\infty) - M(x)] = 0$  in the case  $L = \infty$
2.  $\lim_{x \uparrow L} M(x)(L-x) = 0$  in the case  $M(L) = \infty$ .

Besides, in this connection, some further partially known results are given.

Card 1/2

There are 7 Soviet references.

A Criterion That the Spectrum of a Singular String is Discrete SOV/140-58-2-12/20

ASSOCIATION: Izmail'skiy gosudarstvennyy pedagogicheskiy institut  
Odesskiy inzhenerno-stroitel'nyy institut  
(Izmail State Pedagogical Institute  
Odessa Institute for Construction Engineering)

SUBMITTED: November 15, 1957

Card 2/2

AUTHOR: Kats, I.S.

SOV/20-122-6-5/49

TITLE: Some General Theorems on the Behavior of the Spectral Functions of Differential Systems of Second Order (Nekotoryye obshchiye teoremy o povedenii spektral'nykh funktsiy differentsial'nykh sistem vtorogo poryadka)

PERIODICAL: Doklady Akademii nauk, SSSR, 1958, Vol 122, Nr 6, pp 974-977 (USSR)

ABSTRACT: Let the differential system

$$(1) \quad -\frac{d}{dx} \left( p(x) \frac{d}{dx} y(x) \right) + q(x)y(x) - \lambda \varphi(x)y(x) = 0, 0 \leq x < L < \infty$$

$$y(0) = n, \quad p(x) \frac{d}{dx} y(x) \Big|_{x=0} = m$$

be given, where  $m$  and  $n$  ( $m^2 + n^2 > 0$ ) are real constants,  $\lambda$  a complex parameter;  $\varphi(x) \geq 0$ ,  $p(x) > 0$  and  $q(x)$  are real functions measurable on  $0 \leq x < L$  for which

$$0 < \int_0^L \varphi(x) dx < \infty, \quad \int_0^L \frac{1}{p(x)} dx < \infty, \quad \int_0^L |q(x)| dx < \infty, \quad l \in (0, L)$$

Card 1/4



Some General Theorems on the Behavior of the Spectral Functions of Differential Systems of Second Order SOV/20-122-6-5/49

A further system of the same type is

$$-\frac{d}{dx} \left( p_0(x) \frac{d}{dx} y(x) \right) + q_0(x)y(x) - \lambda \varphi_0(x)y(x) = 0 \quad (0 \leq x \leq L_0 \leq \infty)$$

(2)  $y(0) = n_0, \quad p_0(x) \frac{d}{dx} y(x) \Big|_{x=0} = m_0$

A nondecreasing function  $\omega(\lambda)$  is said to belong to the class  $(K_p)$ , if it is defined at least on  $1 \leq \lambda < \infty$ ,  $\omega(\lambda) \rightarrow \infty$  or  $\lambda \rightarrow +\infty$ , and if there exist  $\eta < \nu$  and  $N > 1$ , so that for  $\eta > \lambda > N$  it holds

$$\frac{\omega(\eta)}{\omega(\lambda)} < \left(\frac{\eta}{\lambda}\right)^\nu$$

A nondecreasing function  $\theta(\lambda)$  which is defined at least on  $1 \leq \lambda < \infty$  is said to belong to the class  $(\bar{K}_p)$ , if there exist an  $\omega(\lambda) \in (K_p)$ , so that

$$\lim_{\lambda \rightarrow \infty} \frac{\theta(\lambda)}{\omega(\lambda)} = 1$$

Card 2/4

Some General Theorems on the Behavior of the Spectral Functions of Differential Systems of Second Order SOV/20-122-6-5/49

Theorem: If  $n = n_0 \neq 0$ ,  $\lim_{x \rightarrow \infty} \frac{p(x)}{p_0(x)} = 1$ ,  $\lim_{x \rightarrow 0} \frac{q(x)}{q_0(x)} = 1$

and if at least one spectral function  $\tau_0(\lambda)$  of (2) belongs to  $(\bar{K}_1)$ , then for each spectral function  $\tau(\lambda)$  of (1) it holds

$$\lim_{\lambda \rightarrow \infty} \frac{\tau(\lambda)}{\tau_0(\lambda)} = 1$$

Theorem: Let  $n = n_0 = 0$ ,  $m = m_0 \neq 0$ ,  $\lim_{x \rightarrow \infty} \frac{p(x)}{p_0(x)} = 1$ ,

$\lim_{x \rightarrow 0} \frac{q(x)}{q_0(x)} = 1$ . At least one spectral function  $\tau_0(\lambda)$  of (2)

is assumed to belong to  $(K_2)$ , furthermore let

$$\sigma_0(\lambda) = \int_1^\lambda \frac{d\tau(\xi)}{\xi} \quad (\lambda > 1)$$

Card 3/4

Some General Theorems on the Behavior of the Spectral Functions of Differential Systems of Second Order SOV/20-122-6-5/49

belong to  $(\bar{K}_1)$  and let  $\lim_{\lambda \rightarrow \infty} \lambda \tau_0^{-1}(\lambda) \sigma(\lambda) < \infty$ . Then for each spectral function  $\tau(\lambda)$  of (1) it holds

$$\lim_{\lambda \rightarrow \infty} \frac{\tau(\lambda)}{\tau_0(\lambda)} = 1$$

There are 7 Soviet references.

ASSOCIATION: Izmail'skiy gosudarstvennyy pedagogicheskiy institut (Izmail State Pedagogical Institute)

PRESENTED: June 5, 1958, by S.L. Sobolev, Academician

SUBMITTED: March 5, 1958

Card 4/4

16(1)

AUTHOR: Kats, I.S.

SOV/38-23-2-7/10

TITLE: On the Growth of the Spectral Functions of Differential Systems of Second Order (O roste spektral'nykh funktsiy differentsial'nykh sistem vtorogo poryadka)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1959, Vol 23, Nr 2, pp 257 - 274 (USSR)

ABSTRACT: Let  $\tau(\lambda)$  be the spectral function of the system  
 $-y''(x) + q(x)y(x) - \lambda \int_0^x \xi(s)y(s)ds = 0$ ,  $0 \leq x < L$   
 $y'(0) = m$ ,  $y(0) = n$  ( $\text{Im } m = \text{Im } n = 0$ ,  $m^2 + n^2 \neq 0$ ).  
 Here let  $\xi(x) > 0$  and  $q(x)$  be real, measurable and summable on every interval  $[0, l]$ ,  $0 < l < L$ . Let

$$M(x) = \int_0^x \xi(s)ds, \quad 0 \leq x < L.$$

Fundamental theorem: For the convergence of the integral

$$\int_{-\infty}^{\infty} \frac{d\tau(\lambda)}{1 + |\lambda|^\alpha}$$

Card 1/2

On the Growth of the Spectral Functions of  
Differential Systems of Second Order

SOV/38-23-2-7/10

it is necessary and sufficient : The convergence of the integral

$\int_0^1 \left( \int_0^x M(s) ds \right)^{\lambda-1} dx_1$  , if  $n \neq 0$  , and the convergence of the

integral  $\int_0^1 \left( \int_0^x s dM(s) \right)^{\lambda-2} dM(x)$  , if  $n = 0$  (here from the convergence for an arbitrary  $l \in (0, L)$  it follows the convergence for all  $l \in (0, L)$ ).

The result completes the former results of the author [Ref 2] Papers of M.G. Kreyn are essentially used. The author mentions V.A. Marchenko. 14 theorems and lemmata are given. - There are 7 references, 6 of which are Soviet, and 1 is American.

ASSOCIATION: Izmail'skiy gosudarstvennyy pedagogicheskiy institut (Izmail State Pedagogical Institute)

PRESENTED: by S.L. Sobolev, Academician

SUBMITTED: May 10, 1958

Card 2/2

16(1)

AUTHOR: Kats, I.S.

SOV/20-126-6-7/67

TITLE: Density of the Spectrum of a String

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 6,  
pp 1180 - 1182 (USSR)

ABSTRACT: The author starts from the investigations [Ref 1,2]. He considers the spectrum defined in [Ref 1] of a stretched regular string. M.G. Kreyn [Ref 2] has shown that every positive increasing numerical sequence  $\{\lambda_k\}$  can serve as a spectrum. The author investigates when the string possesses a spectrum

$$\{\lambda_k\} \text{ so that the series } \sum_{j=1}^{\infty} \frac{1}{\lambda_j^{\alpha}} \quad (1)$$

converges for a certain  $\alpha$ . In [Ref1] the problem is completely solved for  $\alpha = 1$ . In the present paper the author gives some partial results for the general case: Sufficient conditions for the convergence of (1) for  $0 < \alpha < 1$ ; sufficient and necessary conditions for integer  $\alpha$ . Some applications of the results refer to the convergence of

Card 1/2

Density of the Spectrum of a String

SOY/20-126-6-7/67

continued fractions of meromorphic functions with given poles.

There are 3 references, 2 of which are Soviet, and 1 Dutch.

PRESENTED: March 14, 1959, by S.L. Sobolev, Academician

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Kats, I. S.

ZLATKIN, Moisey Grigor'yevich; DOROKHOV, Nikolay Nikolayevich; LEBEDEV, Nikolay Ivanovich; MAKAROV, Nikolay Yevgen'yevich; NEYSHTAT, Zya-ma Fal'kovich; SYCHEV, Arkadly Mikhaylovich; SKLYUYEV, P.V., kand. tekhn. nauk, retsenzent; TASHCHEV, A.K., kand. tekhn. nauk, retsenzent; TRUBIN, V.N., kand. tekhn. nauk, retsenzent; VSHIVKOV, P.P., inzh., retsenzent; KON'KOV, A.S., inzh., retsenzent; LEBEDEV, N.S., inzh., retsenzent; POTEKUSHIN, N.V., inzh., retsenzent; TYAGUNOV, V.A., doktor tekhn. nauk, red.; SOKOLOV, K.N., kand. tekhn. nauk, red.; SKORNYAKOV, V.B., red.; YAROSHENKO, Yu.G., red.; ZAKHAROV, B.P., inzh., red.; AMIROV, I.M., inzh., red.; MYSHKOVSKIY, V.A., inzh., red.; SHELEKHOV, V.A., inzh., red.; BOGOMOLOV, O.P., inzh., red.; KATS, I.S., inzh., red.; LEVANOV, A.N., inzh., red.; DUGINA, N.A., tekhn. red.

[Handbook on forging practices] Spravochnik rabocheho kuznechno-shtampovochnogo proizvodstva. By M.G.Zlatkin i dr. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 776 p.

(MIRA 14:9)

(Forging—Handbooks, manuals, etc.)



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B112/B108

16.3400

AUTHOR: Kats, I. S.

TITLE: Two general theorems on the asymptotic behavior of the spectral functions of second-order differential systems

PERIODICAL: Akadimiya nauk SSSR. Izvestiya seriya Matematicheskaya, v. 26, no. 1, 1962, 53-78

TEXT: Comparison theorems are derived, which contain criteria for the asymptotic behavior of the spectral functions of the boundary value problem

$$-d(p(x)dy(x)/dx)/dx + q(x)y(x) - \lambda q(x)y(x) = 0 \quad (0 \leq x < L < \infty), \quad (3)$$

$$p(x)dy(x)/dx \Big|_{x=0} = m, \quad y(0) = n$$

with respect to the asymptotic behavior of the coefficients  $p(x)$  and  $q(x)$  for  $x \rightarrow 0$ . A non-decreasing function  $\omega(\lambda)$  ( $1 \leq \lambda < \infty$ ) is said to be a function of the class  $(K_\gamma)$  if  $\omega(\lambda) \rightarrow +\infty$  for  $\lambda \rightarrow +\infty$  and if there are numbers  $\gamma \in (0, \gamma)$  and  $N > 1$  for which  $\omega(\gamma)/\omega(\lambda) < (\gamma/\lambda)^\gamma$  for  $\gamma > \lambda > N$ . A non-decreasing function  $\mathcal{A}(\lambda)$  is said to be a function of the class

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$(\bar{K}_j)$  if there is a function  $\omega(\lambda) \in (K_j)$  with  $\omega(\lambda) \sim \omega(\lambda)$  for  $\lambda \rightarrow +\infty$ .

The two principal theorems of the paper are the following:  $A_1$ . If

$n = \tilde{n} \neq 0$ ,  $\tilde{p}(x) \sim p(x)$  and  $\tilde{q}(x) \sim q(x)$  for  $x \rightarrow 0$ , and if there is at least one spectral function  $\tau(\lambda) \in (\bar{K}_1)$  of the system (3), then for an arbitrary

spectral function  $\tilde{\tau}(\lambda)$  of the corresponding system  $(\tilde{3})$ , the asymptotic relation  $\tilde{\tau}(\lambda) \sim \tau(\lambda)$  for  $\lambda \rightarrow +\infty$  is valid.  $A_0$ . If  $n = \tilde{n} = 0$ ,  $m = \tilde{m} \neq 0$ ,

$\tilde{p}(x) \sim p(x)$  and  $\tilde{q}(x) \sim q(x)$  for  $x \rightarrow 0$ , and if there is at least one spectral function  $\tau(\lambda)$  of the system (3), which satisfies the conditions

$\tau(\lambda) \in (\bar{K}_2)$ ,  $\sigma(\lambda) = \int_1^\lambda \frac{d\tau(\xi)}{\xi} \in (\bar{K}_1)$ , and  $\lim_{\lambda \rightarrow +\infty} \lambda \sigma(\lambda) [\tau(\lambda)]^{-1} < \infty$ , then for

an arbitrary spectral function  $\tilde{\tau}(\lambda)$  of the system  $(\tilde{3})$ , the asymptotic relation  $\tilde{\tau}(\lambda) \sim \tau(\lambda)$  for  $\lambda \rightarrow +\infty$  is valid. There are 11 Soviet references.

ASSOCIATION: Odesskoye Krasnoznamennoye vyssheye obshchevoyskovoye komandnoye uchilishche (Odessa Red Banner Higher Military

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KATS, I.S.

Multiplicity of the spectrum of a second-order differential operator, and expansion in eigenfunctions. Izv. AN SSSR. Ser. mat. 27 no.5:1081-1112 S-0 '63. (MIRA 16:11)

1. Odesskoye Krasnoznamennoye vyssheye obshchevovskovoye komandnoye uchilishche.